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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,861

10/17/2003

Atsushi Tabata

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08/25/2005

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EXAMINER

BOTTORFF, CHRISTOPHER

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,861

Applicant(s)

TABATA, ATSUSHI

Examiner

Christopher Bottorff

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-95 is/are pending in the application.
- 4a) Of the above claim(s) 20-27, 41-43 and 49-95 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-40 and 44 is/are rejected.
- 7) ☒ Claim(s) 45-48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 20-95 are pending. Claims 20-27, 41-43, and 49-95 are withdrawn as being directed to a non-elected invention. Claims 28-40 and 44-48 are under consideration.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28-34, 36, 37, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito US 5,808,448 in view of JP 50-31516.

Naito discloses a vehicle having a motor 14, a fuel cell 1, a secondary battery 2, a regulation unit 12, and a control unit 10. See Figure 1. The vehicle further has a remaining charge measurement unit 5, a high torque condition decision unit 30, an accelerator travel measurement unit (see column 3, lines 64-65, and column 4, lines 27-28), a required torque input unit (the accelerator itself), and auxiliary machinery 120a, 120b, 120c, linked with the motor (see column 7, lines 2-5). Naito does not disclose that the vehicle also has a heat engine.

However, JP 50-31516 teaches that the practice of providing a motor 2 and heat engine 1 in combination as two power sources in a system was old and well known in the art at the time the invention was made. See the English abstract. From the

teaching of JP 50-31516, providing the system of Naito with a heat engine in addition to the motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would provide the system with an additional source of power having technology that is reliable and well established.

The additional limitations of the claims attempt to define the apparatus in terms of function and intended use. However, it is well settled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device *is*, not what it *does*.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original). Furthermore, claims containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all of the structural limitations of the claims. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The vehicle produced from the combination of the teachings of Naito and JP 50-31516 includes all of the structural limitations of the claims. Moreover, the system of Naito, as modified by JP 50-31516, performs the claimed functions. Thus, the invention defined by the claims does not distinguish over the prior art.

Claims 35 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito US 5,808,448 in view of JP 50-31516 as applied to claim 28 above, and further in view of Kubo US 5,722,502.

Naito does not disclose a drive mode switch or a second motor, as defined in claims 35 and 38. However, Kubo teaches the desirability of providing a vehicle with a drive mode switch. See column 10, lines 14-20. Kubo also teaches the desirability of providing a vehicle with an engine with a second motor 30. See Figure 1. From the teachings of Kubo, providing the vehicle of Naito with a drive mode switch would have been obvious to one of ordinary skill in the art at the time the invention was made. This would allow an operator to select a drive mode that is suitable for desired driving conditions. From the further teachings of Kubo, providing the vehicle of Naito, as modified by JP 50-31516, with a second motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help effectively start the engine.

#### ***Allowable Subject Matter***

Claims 45-48 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art does not teach a power estimation unit in combination with the further limitations of the claims as defined in claim 45.

#### ***Response to Arguments***

Applicant's arguments filed June 21, 2005 have been fully considered but they are not persuasive.

Applicant asserts that those skilled in the art would not have been motivated by JP '516 to add a heat engine to the vehicle of Naito because JP '516 allegedly teaches against the combination of a fuel cell and a secondary battery as an energy supply for a motor in a vehicle having a heat engine. This assertion is based on the statements in JP '516 that boost batteries are not needed and that such batteries have intrinsic problems in providing energy supplementation. Since battery systems have intrinsic problems and are not needed when a heat engine is present, Applicant contends that the teachings of JP '516 may not be applied to the system of Naito, which includes a secondary battery. The examiner respectfully disagrees.

The system of Naito is a battery system with the intrinsic problems noted in JP '516. Since JP '516 indicates that utilizing a heat engine may relieve these intrinsic problems, JP '516 offers sufficient motivation to utilize a heat engine in the system of Naito.

Furthermore, Naito discloses a controller that controls the operation of a fuel cell, secondary battery, and motor. JP 50-31516 teaches that a controller controls the operation of the engine. Although neither Naito nor JP 50-31516 alone teach a controller that controls the operation of fuel cell and secondary battery power supplies and motor and heat engine power sources, both Naito and JP 50-31516 teach that the fuel cell, secondary battery, motor, and heat engine in the respective systems are controlled by a controller. Thus, controlling with a controller fuel cell and secondary battery power supplies and motor and heat engine power sources combined in a single

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system would have been obvious from Naito and JP 50-31516, as indicated in the rejection above.

In regard to the assertion that JP '516 teaches away from the combination, the mere facts that a secondary battery is not needed when an engine is present and the system of Naito includes a secondary battery does not preclude the combination. Of course secondary batteries for propulsion are not needed when an engine is available for propulsion. Many vehicles having only a heat engine as a power source have been produced, and such configurations offer advantages in terms of vehicle cost and simplicity. However, cost and simplicity are not the only factors considered in contemporary vehicle design. Reducing emissions that are harmful to the environment is also a significant consideration. In order to reduce harmful emissions, hybrid vehicles have been developed that combine heat engines with secondary batteries. Although the secondary batteries are not needed, they are advantageous in that they allow vehicle operation with minimal or no harmful emissions under some conditions. Thus, the statement in JP '516 that secondary batteries are not needed does not yield the conclusions that secondary batteries should not be used when heat engines are used and any system having a secondary battery is incompatible with the addition of a heat engine. The statement indicates nothing more than the fact that when a heat engine is used, a secondary battery does not have to be used. A secondary battery may still be used if desired and the combination cited by the examiner is accordingly proper.

The fuel cell of Naito may already serve the purpose of reducing emissions, which may justify a decision not to use a secondary battery. However, the secondary

battery in the combined system would serve to help further reduce emissions, would offer an additional power source in the event the fuel cell or heat engine fails, and offers the system greater versatility.

Applicant further asserts that dependent claims 29-31, 35, and 38-40 distinguish over the prior art because of their statements of how the physical system is intended to be operated. However, it is well settled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device *is*, not what it *does*.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original). Furthermore, claims containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all of the structural limitations of the claims. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The vehicle produced from the combination of the teachings of Naito and JP 50-31516 includes all of the structural limitations of the claims. Moreover, the system of Naito, as modified by JP 50-31516, performs the claimed functions. In particular, column 5, lines 18-21, of Naito suggests the operation recited in claim 29 and column 5, line 66, through column 6, line 2, of Naito suggest the operation recited in claim 31. The operation recited in claim 35 is suggested by the combined teachings of Naito and Kubo. Column 4, lines 27-33, of Naito suggests that torque level is used to control vehicle operation and the torque determination results from a manual input. The switch



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of Kubo is a manual input that would effectively initiate torque determination, suggesting the obvious nature of the claimed operation. Thus, the invention defined by the claims does not distinguish over the prior art.

In regard to dependent claim 38, Applicant suggests that the second motor 30 of Kubo cannot provide a teaching for modifying Naito to include a second motor which drives auxiliary machinery when the engine is stopped since motor 30 is a starter motor. However, claim 38 does not require the second motor to drive auxiliary machinery when the engine is stopped. Rather, claim 38 requires the control unit to drive the second motor while the heat engine is stopped, and without regard to the auxiliary machinery. This requirement is consistent with a starter motor. While heat engine 28 of Kubo is stopped, control unit 20 will drive motor 30 in order to start heat engine 28. Thus, claim 38 fails to distinguish over the cited combination.

### ***Conclusion***

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

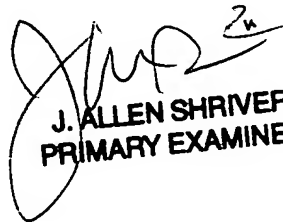
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Bottorff

  
J. ALLEN SHRIVER  
PRIMARY EXAMINER